

REMARKS

Claims 4-11 have been amended. Support for the amendment can be found generally throughout the Specification and Examples, specifically at page 3, line 13 and Applicants respectfully submit that no new matter has been added.

I. Rejection under 35 U.S.C. §102(b)

Claims 4-11 are rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative, under 35 U.S.C. § 103(a) as obvious over Trivette, Jr. et al. Applicants respectfully traverse this ground of rejection.

Applicants submit that in order to anticipate a claim the prior art reference must teach each and every element of the claimed invention, either expressly or inherently. Also, Applicants respectfully submit that "in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claims limitations. The teachings or suggestions to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure." See MPEP § 2142, citing In re Vaeck, 947 F.2d 488, 20 USPQ 2d. 1438 (Fed. Cir. 1991).

The present invention is directed to a method for the mastication of rubbers comprising the step of mixing said rubbers with a dialkyl polysulfide and optionally rubber chemicals and/or fillers.

As previously submitted, Trivette, Jr. et al. discloses an improved vulcanization process, specifically a process for preventing pre-vulcanization. According to Trivette, Jr. et al. prevulcanization may occur during the usual processing steps prior to the final vulcanization step or during storage. See Column 1, lines 26-18. According to Trivette, Jr. et al. it was discovered that, in the presence of a sulfur vulcanizing agent, the taught organic sulfide inhibit prevulcanization. See Column 2, lines 11-15. As disclosed in the Examples, the addition of the polysulfide inhibited prevulcanization of the rubber mixtures. Accordingly, Trivette, Jr. et al. teaches adding dialkyl polysulfides to a rubber which

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has been vulcanized or adding the dialkyl polysulfides during the vulcanization process. See, Stocks A-X in the Examples, which contain the vulcanizing agent, sulfur and the vulcanizing accelerator.

According to the Office Action, the Examiner has a reasonable basis to presume that the prior art possesses the function, which would anticipate or render obvious the instantly claimed invention because each of the claimed ingredients is present, except for function.

A masticating agent is added to a rubber mixture to soften the rubber thereby making the rubber more processable. During mastication the main chain of the rubber compound is broken down. In the alternative, during vulcanization cross-linking of the rubber occurs to provide a rubber with improved properties, such as, strength and stability. Accordingly, Applicants submit that if a dialkyl polysulfide is added during or subsequent to vulcanization, as disclosed in Trivette, Jr. et al., the dialkyl polysulfide could not have a mastication effect because during vulcanization cross-linking of the rubber takes place, which is the exact opposite of a masticating effect. Therefore, Applicants submit that when the disclosure of Trivette, Jr. et al. is taken as a whole, not only does Trivette, Jr. et al. fail to teach or suggest the claimed invention, it actually teaches away from a method of masticating a rubber mixture with a polysulfide. Accordingly, Applicants request withdrawal of this ground of rejection.

II. Rejection under 35 U.S.C. § 103(a)

Claims 4-11 were rejected as under 35 U.S.C. § 103(a) in view of Scholl, et al. or Abele, et al. Applicants respectfully traverse these grounds of rejection.

According to the Final Office Action, "[t]he Examiner maintains that once again it is not necessary for the prior art to identify these compounds as masticating agents but rather show them in the compositions as claimed and thus it would be reasonable to presume that the function **inherently** possessed by the compounds would transfer to that composition." See page 4, lines 3-10, emphasis added. Applicants submit that which is inherent in the prior art, if not known at the time of the invention, cannot form a proper basis for rejecting the claimed invention as obvious under 35 U.S.C. § 103(a). See In re Shetty, 566 F.2d 81,86, 195 USPQ 753,756-57 (C.C.P.A. 1977) (determining that before Shetty had discovered an appetite curbing effect for the claimed adamantane compounds, nothing in the art suggested using the Mo5861

structurally similar prior art adamantanes to curb appetite). Quoting from In re Spormann, 363 F.2d 444, 448, 150 USPQ 449, 452 (C.C.P.A. 1966), the court stated:

[T]he inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

Accordingly, Applicants submit the Examiner has not met a prima facie case of obviousness.

As previously argued, Applicants submit that Scholl, et al. fails to teach or suggest each and every element of the claimed invention and that Scholl, et al. fails to provide any suggestion or motivation, to arrive at the claimed invention. Scholl, et al. teaches rubber vulcanizates, which are produced using carboxylic oligosulfides. According to Scholl, et al. the rubber vulcanizate has improved hysteresis (dynamic) properties. As illustrated in Tables 1, 2 and 3 of Scholl, et al. the addition of the carboxylated oligosulfides to the rubber mixture caused a decrease or lower Tan δ compared to the control data, i.e., the oligosulfides were acting as crosslinkers or crosslinking activators. Accordingly, Applicants submit that one skilled in the art would not be motivated to use the dialkyl polysulfides as masticating agents in view of the disclosed carboxylated oligosulfides. Therefore, Applicants request withdrawal of this ground of rejection.

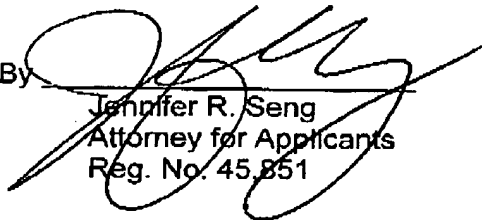
Applicants submits that Abele, et al. discloses in figure 5 on page 210 disulfides of the formula R-S-S-R', wherein R = optionally substituted hydrocarbon residues as the third group of useful mastication agents. As further disclosed in Abele, et al., the third group includes dibenzamido-diphenyl disulfide. Dibenzamido-diphenyl disulfide is the only disulfide which is disclosed. Abele, et al. does not contain any further disclosure that dialkyl disulfides are effective as mastication agents. Abele, et al. only discloses, to one skilled in the art, that dibenzamido-diphenyl disulfide is useful as a masticating agent.

Further, Applicants submit there is no teaching or motivation in Abele, et al. that dialkyl disulfides or dialkyl polysulfides would be useful as masticating agents. As shown in Example 5 of the present invention, the more economical dialkyl polysulfides of the present invention when compared to Renacit® 11 (which is dibenzamido-diphenyl disulfide as disclosed in Abele, et al.) have a similar or

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improved mastication effect. Furthermore, as illustrated in Example 7 and Table 4 too high (incorrect) dosages of the dialkyl polysulfide masticating agents do not lead to undesirably low viscosities as seen with Renacit®. Therefore, Applicants submit that when the disclosure of Abele, et al. is taken as a whole it fails to teach or suggest the use of dialkyl polysulfides as masticating agents. Accordingly, Applicants request withdrawal of this ground of rejection.

Respectfully submitted,

By 
Jennifer R. Seng
Attorney for Applicants
Reg. No. 45,851

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3879
FACSIMILE PHONE NUMBER:
(412) 777-3902

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